

KELLAMS BRIDGE

(Interstate Bridge No. 8)

Pennsylvania Historic Bridges Recording Project

Spanning Delaware River at Stalker-Kellams Rd. (State Rt. 1018)

Stalker

Wayne County

Pennsylvania

HAER No. PA-470

HAER
PA
64-STALK,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
1849 C Street, NW
Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

KELLAMS BRIDGE
(Interstate Bridge No. 8)

HAER No. PA-470

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PA
64-STALK,
1-

Location: Spanning Delaware River at Stalker-Kellams Rd. (State Rt. 1018), between Stalker, Wayne County, Pennsylvania, and Hankins vicinity, Sullivan County, New York.

USGS Quadrangle: Callicoon, New York-Pennsylvania (7.5-minute series, 1973).

UTM Coordinates: 18/490540/4629970

Date of Construction: 1889. Altered 1936.

Designer: David Kellam.

Builder: David Kellam.

Present Owner: New York-Pennsylvania Joint Interstate Bridge Commission.

Present Use: Vehicular bridge.

Significance: The Kellams Bridge is one of few short-span wire-cable suspension bridges remaining in Pennsylvania. It was altered extensively in 1936. The Kellams Bridge was listed in the National Register of Historic Places in 1988.

Historian: Dr. Mark M. Brown, August 1997.

Project Information: This bridge was documented by the Historic American Engineering Record (HAER) as part of the Pennsylvania Historic Bridges Recording Project - I, co-sponsored by the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Historical and Museum Commission during the summer of 1997. The project was supervised by Eric DeLony, Chief of HAER.

Description

The Kellams Bridge is a one-lane, deck-stiffened cable suspension bridge, approximately 388 feet long between its towers.¹ It crosses the Delaware River between Pennsylvania and New York state just downstream of Little Equinunk Creek, near Stalker (also known as Kellams), Pennsylvania. The bridge has been so extensively rebuilt and repaired that little original fabric remains.

The Pennsylvania abutment is constructed of random coursed masonry and probably dates to 1889. While there may be original stone work remaining on the New York side, it is concealed by extensive concrete encasement. The towers consist of 14" wide-flange beams with horizontal struts bracing near the middle and at the top of the towers. Crossed rods brace the towers against sway.

Each of the wire cables are attached to concrete anchor blocks with individual Roebling-brand cable sockets. Each set of cables consists of three wire cables, approximately 7-1/5", 5-5/8", and 7" in circumference, with the smallest cable in the middle. Deck hangers, consisting of tension rods with turnbuckles, are attached to the cables by means of steel clamps that also maintain the parallel alignment of the wire rope cables. Near mid-span, the cables descend below the level of the deck beams. At these places, welded I-beams connect the tops of the cable clamps to the deck beams and act as compression members.

As currently configured, the deck consists of a steel grating resting on channel sections, which in turn are supported by I-beam stringers bolted to the webs of the 16" wide-flange deck beams. The Howe-pattern stiffening truss has high-strength steel bolt connections and is braced against wind by angle sections connected to the deck beams. Split 12" wide-flange beams form the top and bottom chords, while angle sections are used for the truss's webs.

There are reports that suggest that the bridge had a total of four cables when it was purchased by the New York-Pennsylvania Joint Interstate Bridge Commission in 1932. If so, then two more cables were added and the wooden towers and truss replaced with steel as part of the 1936 rebuilding. The current hangers might date to 1975. In 1990, the New York towers were jacked up and given a new pedestal and a new abutment facing.²

¹ All dimensions that follow are approximate and are based on Lichtenstein Engineering Associates, PC, "Kellam-Stalker Bridge Inspection Report," 1986, bridge inspection file, BMS No. 63-1018-0210-2089, PennDOT District 4-0, Dunmore, Pa.; and the author's field measurements, July 1997.

² Lichtenstein, "Kellam-Stalker Bridge Inspection Report," 7; Ted Day, Regional Transportation Maintenance Engineer, New York Department of Transportation, Binghamton, N.Y., conversation with author, 11 July 1997. Day reported that many records of the New York-Pennsylvania Joint Interstate Bridge Commission were lost in the 1981 fire in Binghamton's State Office Building.

Bridging the Delaware

The topography, climate, and political boundaries along the Delaware River Valley between Hancock and Port Jervis, New York, presented distinctive conditions for bridge construction. Steep valley walls and rugged terrain hindered travel and insured the comparative isolation of the region. The coming of the Erie Railroad in 1848 offered expanded opportunities for economic development. It also increased the pressure for bridges. Crossing the Delaware by ferry or low water ford was inconvenient for individuals, but the locally produced bulk commodities, namely timber, forest byproducts (tanning bark and acid), "bluestone," and agricultural products, were more difficult to transport to the railroad depot. High water and grinding ice often made river crossings unpassable. These same conditions, however, were also devastating to bridges. In addition to these difficulties, Delaware Valley communities were confronted with the fact that the Delaware was also the boundary between New York and Pennsylvania. Constructing a bridge across the state line using public funds would have required the difficult task of securing taxes from both states. In the upper Delaware valley, private capital became the means to secure reliable all-weather river crossings. Many of the resulting private bridge operating companies initially constructed covered bridges. Most of the Delaware bridges built after about 1850, however, were suspension bridges.

It seems reasonable to suggest several reasons for this. The construction costs of suspension bridges are often less than for other types of bridges. Expensive falsework is not needed to support a suspension bridge during construction. Other materials and fixtures (such as anchor-block castings, hangers, and cable saddles) are easy to transport and were often readily available from wire manufacturers.³ The ability for suspension bridges to span most any river crossing without piers is also an important consideration. Avoiding unstable soils or difficult excavations might have been less of a problem in the mountainous upper Delaware. Nevertheless, a barrage of piers would be a serious navigation obstacle to the Delaware lumber trade.⁴ The charter of the Little Equinunk Bridge Company explicitly required, for example, that the bridge could not hinder navigation.⁵ Lack of mid-stream piers may have offered an additional advantage over the traditional covered bridge. The multiple piers required to support

³ The Roebling-brand anchor blocks at Kellams probably date to the 1936 rebuilding and are an example of the off-the-shelf components available from wire companies. While it was not always the case, as will be seen below, there is no evidence that the Roebling interests had any involvement with the original 1889 Kellams Bridge. For another example of a short-span suspension bridge using standard fixtures, see U. S. Department of the Interior, Historic American Engineering Record (HAER) No. WA-44, "Nisqually River Suspension Bridge," 1992, Prints and Photographs Division, Library of Congress, Washington, D.C.

⁴ F. H. Frankland, *Suspension Bridges of Short Span* (New York: American Institute of Steel Construction, 1934), 11-15.

⁵ Commonwealth of Pennsylvania, "An Act to incorporate the Little Equinunk Bridge Company and authorize them to construct a toll bridge across the Delaware River at Little Equinunk, Wayne County," Act of the General Assembly, 16 April 1889, Pennsylvania Department of State, Harrisburg, Pa.

the longer span covered bridges, and economic pressures to keep them as short as possible, might have made covered bridges especially susceptible to flooding and ice. Thus while generally thought of as most suitable for long-span bridges, the suspension bridge clearly proved to be an economic alternative for the shorter spans of the upper Delaware.

Finally, John Roebling's 1849 wire suspension viaduct at Lackawaxen and the presence of his wire rope company downstream at Trenton, New Jersey, offered a strong precedent and a pool of engineering talent. Indeed, Roebling apparently made preliminary sketches for the Shohola-Barryville Bridge and a local businessman completed the project using wire and materials purchased from Roebling. The 1869 bridge across the Delaware at Hancock, New York, was a Roebling bridge.⁶

Early History of the Little Equinunk Bridge Company

While there may be little original fabric remaining, Kellams bridge does uncommon insight in to how private bridge companies started and operated.⁷

On 30 April 1888, ten prominent citizens from northeastern Wayne County met to form the Little Equinunk Bridge Company.⁸ Notable figures included Joel G. Hill and George S. Purdy. Hill, a future state senator, was an entrepreneur with dairy, lumber, saw milling, and acid production interests. Purdy would shortly become a county commissioner and was an attorney based in the county seat at Honesdale. Others included David L., H. P., and J. R. Kellam, residents of the small Pennsylvania community at the mouth of the Little Equinunk often named for the family. Capitalization of the company was set at \$10,000 distributed between two hundred shares, each at \$50 par value. The stockholders met again in mid-July and elected directors and officers, paid in \$1,000, and established a building and construction committee.

The company was moving swiftly, because in less than a week the building committee met, finalized specifications for the bridge, and awarded the construction contract to David Kellam for \$9,000. Very little is known about David Kellam or his qualifications to build a suspension bridge. One local historian has suggested that he might have acquired bridge-

⁶ Patricia H. Christian, "A Tale of Two Bridges: Kellam and Lordville," typescript, n.d., bridge file, Equinunk Historical Society, Equinunk, Pa.; Arthur N. Meyers, *Crossing the Delaware River ... Via Toll Bridges* (Narrowsburg, N.Y.: Delaware Valley Press, 1970), 7-8, 11-12. For more about Roebling's Delaware Aqueduct, see U. S. Department of the Interior, Historic American Engineering Record (HAER) No. PA-1, "Delaware & Hudson Canal, Delaware Aqueduct," 1972, Prints and Photographs Division, Library of Congress, Washington, D.C.

⁷ One historian has suggested that the Kellams Bridge might well have not been constructed if an earlier bridge built nearby had been successful; see Meyers, *Crossing the Delaware*, 20.

⁸ This section is largely based on *Minutes of the Stockholders and Directors Meetings of the Little Equinunk Bridge Company, April 30, 1888-January 1911*, Equinunk Historical Society, Equinunk, Pa.

building experience during the Civil War.⁹ Based on historic photographs, the bridge Kellam built was a one-lane wire-suspension bridge.¹⁰ The deck, stiffened by wooden Howe trusses, was suspended from two cables supported by obelisk-shaped wooden towers. Ultimately, company property included a toll collector's house constructed on the Pennsylvania side and a stone dock adjacent to railroad tracks on the New York side.

Minutes of the 28 May 1889 stockholders' meeting report that all but \$162.00 of the capital was paid in. A somewhat curious resolution was passed formally accepting the bridge despite the fact that Kellam had not finished the work. Kellam promised to complete the work, primarily covering and finishing the anchor vaults, towers, and other details, to the satisfaction of the building committee. The final \$1,000.00 payment was withheld pending completion.

It is interesting to note that the minutes make no mention of the fact that it was not until 16 April 1889 that the Pennsylvania General Assembly granted the company a charter. Highlights of the charter include maximum toll rates, the privilege to issue dividends after funding a maintenance and repair account, fines and penalties for both vandalism and for overcharging on tolls. In addition, the legislature provided a mechanism to secure the necessary land should no one be willing to sell to the bridge company. The company had two years to complete the bridge or the charter would expire.¹¹

Construction had advanced to a point in mid-July 1889 that the directors needed to set the toll rates including discounted tickets for heavy users such as local companies owned by board members. The treasurer was authorized to pay David Kellam the balance of his contract, pending transfer of the deed for the stone dock and with the understanding that the painting would be completed immediately.

The company collected more than \$280.00 in tolls during the last half of 1889 and the first dividend, 4 percent, was declared in July 1890. On 29 September 1891, the stockholders learned that David Kellam had withheld some of the tolls from the treasurer. In response, the treasurer was instructed to withhold Kellam's dividends until the funds were accounted for. Not surprisingly, Kellam's name ceases to appear among the names of the company directors thereafter.

The company's business had grown such that the last half of 1894 saw toll receipts rise to \$454.05, plus an additional income of \$30.35 in dockage fees. Wages for the toll collector were \$13.00 per month. A 3 percent dividend was paid to the stockholders. Throughout the remainder of the decade the dividend fluctuated between 2 and 3 percent. Five years later, the toll and dockage receipts came to \$472.73 for the same period.

⁹ Christian, "A Tale of Two Bridges," 2.

¹⁰ See field notes for copies of photographs from the Equinunk Historical Society collections.

¹¹ Commonwealth of Pennsylvania, "An Act to incorporate the Little Equinunk Bridge Company."

Later History of Kellams Bridge

While the residents of the Delaware Valley appreciated the presence of the bridges built by private companies, they did not enjoy paying the tolls. In the early 1920s, politicians on both sides of the border responded to this sentiment. The solution to the political problem that created the private companies in the first place was to create joint bridge commissions between states bordering on the Delaware. These commissions were given the funding and the authority to purchase and arrange for maintenance. During the 1920s all the bridges on the New York-Pennsylvania section of the river were purchased and made toll-free. Two exceptions to this were the Kellams Bridge and the former Delaware River Aqueduct at Lackawaxen. The Delaware Aqueduct, which had been converted to a highway bridge about 1890, remained a toll bridge until it was purchased by the National Park Service in 1980.¹² Kellams Bridge was purchased and "freed" in 1932 at a cost of \$10,146.00. Like most toll bridges purchased by the commission, the stockholders of the Little Equinunk Bridge Company were compensated in the amount of construction costs. While the stockholders did receive a return on their investment, their primary purpose was to secure an all-weather crossing for their business interests. That the rest of the community also benefitted and even helped subsidize the bridge made it so much the better.

The Joint Bridge Commission made extensive repairs to Kellams Bridge in 1936. These included adding new cables, replacing the towers and deck, and (possibly) repairing the New York abutments. Additional repairs were made in 1969, 1975, and 1986. Kellams Bridge was placed on the National Register of Historic Places in 1986 by Pennsylvania as a rare survivor of "small wire-rope suspension bridges built in Pennsylvania."¹³ The State of New York has declared the bridge ineligible for the National Register because "the alterations to the bridge have compromised its integrity from the original date of construction," but declined to pass judgement on the significance of the 1936 rebuild.¹⁴

¹² Robert M. Vogel, *Roebling's Delaware & Hudson Canal Aqueducts*, Smithsonian Studies in History and Technology, No. 10 (Washington, D.C.: Smithsonian Institution Press, 1971; reprint, Philadelphia: Eastern National Park and Monument Association, 1994), 25-6.

¹³ "Highway Bridges Owned by the Commonwealth of Pennsylvania, Department of Transportation," National Register of Historic Places Registration Form, 1986, U.S. Department of the Interior, National Park Service, Washington, D.C., Survey No. SU-2.

¹⁴ Office of Parks, Recreation, and Historic Preservation, New York State, *Minutes of the 50th New York State Review Board Meeting* (28 May 1987), 19-20.

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